

EXAMINER'S AMENDMENT

- An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

- Authorization for this examiner's amendment was given in a telephone interview with applicant's representative, SEAN F. PARMENTER, on 12/27/2009.

AMENDMENT TO THE CLAIMS

The listing of claims as below replaces listing in the CLAIMS that was filed by applicant on 09/23/2009.

1. (Currently amended) A system ~~including one or more computer systems executing one or more computer programs~~ for object model design and validation, the system comprising:

one or more computer systems executing one or more computer programs;

a client interface module communicatively coupled to a client device, wherein the client interface module is configured to receive user input and provide a user interface to a user;

a database configured to store:

objects corresponding to an object model, and

metadata objects describing aspects of the object model during design of the object model, the metadata objects including a metadata object comprising information used to represent a collection of the stored objects corresponding to the object model and representing model classes, [[an]] a metadata object used to represent a single attribute of [[an]] a stored object corresponding to the object model and representing a model class, [[an]] a metadata object used to represent an association between two stored objects corresponding to the object model and representing model classes, or an and a metadata object used to represent one end of an association between two objects corresponding to the object model and representing model classes;

a configuration management module configured to create a deployable collection of metadata objects from the metadata objects stored in the database, wherein the deployable collection of metadata objects represents a tree of metadata objects starting at a root metadata object; and

a validation engine for validating the metadata of objects stored in the database by confirming the metadata objects comply with one or more validation rules, wherein said validation engine validating the metadata comprises is configured to:

perform completeness validation on the deployable collection in response to a user entered command to perform validation on the deployable collection as a validation subject to confirm that data associated with the validation subject complies with the validation rules;

automatically perform correctness validation on the deployable collection when the validation subject is created or updated to confirm that the semantics of the validation subject complies with the validation rules; and

automatically perform completeness and correctness validation on the deployable collection when requested by the configuration management module

creating a deployable collection of objects from the stored objects, in response to a user entered command and a user specified validation subject; and

validating metadata of the created deployable collection of objects against at least one validation rule based on the user specified validation subject to confirm that the metadata of created deployable collection of objects complies with the at least one validation rule,

wherein the created deployable collection of objects represents a tree of objects starting at a root object, and the user specified validation subject represents at least one stored metadata object.

2-7 (Canceled)

8. (Currently amended) A computer-implemented method for object model design and validation, the method comprising:

creating, using a processor of a computer system, an instance of a meta-metadata object describing aspects of an object model during design of the object model in response to user specified information defining the meta-metadata object, the meta-metadata object being information used to represent a collection of objects corresponding to the object model representing model classes, an object used to represent a single attribute of an object corresponding to the object model representing a model class, an object used to represent an

association between two objects corresponding to the object model representing model classes, or an object used to represent one end of an association between two objects corresponding to the object model representing model classes;

automatically applying one or more correctness type validation rules using the processor of the computer system to the instance of the meta-metadata object upon creation to confirm that the semantics of the instance of the meta-metadata object complies with the one or more correctness validation rules;

when a user selects via a user interface validation of the instance of the meta-metadata object, applying one or more completeness validation rules using the processor of the computer system to the instance of the meta-metadata object to confirm that data associated with the instance of the meta-metadata object complies with the one or more completeness validation rules; and

automatically applying both the one or more correctness validation rules and the one or more completeness validation rules using the processor of the computer system to the instance of the meta-metadata object prior to deployment of the instance of the meta-metadata object at runtime.

storing, by a computer system, objects corresponding to an object model in a database, and
storing, in the database, metadata objects describing aspects of the object model during design of the object model, the metadata objects including a metadata object comprising information used to represent a collection of the stored objects corresponding to the object model and representing model classes, a metadata object used to represent a single attribute of a stored object corresponding to the object model and representing a model class, a metadata object used to represent an association between two stored objects corresponding to the object model and representing model classes, and a metadata object used to represent one end of an association between two objects corresponding to the object model and representing model classes;

validating, by the computer system, metadata of objects stored in the database by confirming the metadata comply with one or more validation rules, validating the metadata comprises:

creating a deployable collection of objects from the stored objects, in response to a user entered command and a user specified validation subject; and

validating metadata of the created deployable collection of objects against at least one validation rule based on the user specified validation subject to confirm that the metadata of created deployable collection of objects complies with the at least one validation rule,

wherein the created deployable collection of objects represents a tree of objects starting at a root object, and the user specified validation subject represents at least one stored metadata object.

9. (Canceled)

10. (Currently Amended) The ~~computer-implemented~~ method of claim 8, wherein the ~~meta-metadata object~~ comprises an object used to represent an association between two objects representing model classes and wherein applying a validation rule to the instance of the ~~meta-metadata object~~ by the processor includes validating metadata of the created deployable collection of objects includes applying the at least one validation rule to the an association between two objects of the created deployable collection of objects associated by the association.

11. (Currently Amended) The method of claim 8, further including automatically applying the one or more correctness validation rules ~~using the processor~~ to the instance of the ~~meta-metadata~~ a stored object if the instance of the ~~meta-metadata~~ stored object is automatically updated or manually updated.

12. (Currently Amended) The method of claim 11, wherein the ~~meta metadata object~~ is ~~one of~~ an attribute ~~and an object~~.

13. (Canceled)

14. (Canceled)

15. (Currently Amended) The system of claim 1, further including a deployment manager to deploy the validated metadata objects during runtime.

16. (Previously presented) The method of claim 8, further including:
after applying both the one or more correctness validation rules and the one or more completeness validation rules, deploying the object instance instances of the deployable collection of objects using the processor computer system during runtime after validating.

17. (Previously Presented) A computer-readable storage medium storing a computer program product having instructions executable by a processor of a computer system for implementing the method of claim 8.

REASONS FOR ALLOWANCE

- The following is an examiner's statement of reasons for allowance:

Prior arts of record do not render obvious, nor anticipate the combination of claimed elements including the technique of *creating a deployable collection of objects from the stored objects, in response to a user entered command and a user specified validation subject; and validating metadata of the created deployable collection of objects against at least one validation rule based on the user specified validation subject to confirm that the metadata of created deployable collection of objects complies with the at least one validation rule, wherein the created deployable collection of objects represents a tree of objects starting at a root object, and the user specified validation subject represents at least one stored metadata object* as recited in claims 1 and 8. Thus, claims 1 and 8 are allowed. Dependent claims 10-12 and 15-17 are allowed at least by virtue of their dependencies from claims 1 and 8.

- Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

CONTACT INFORMATION

- Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUNG Q. PHAM whose telephone number is 571-272-4040. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JAMES K. TRUJILLO can be reached on 571-272-3677. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2159

- Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/HUNG Q. PHAM/
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